

CLAIMS

1. (Currently Amended) A composition ~~capable of~~ for emitting circularly polarised light comprising a medium including a chiral, helical liquid crystalline phase with a substantially fixed, temperature independent helical pitch, said liquid crystalline phase being comprised of calamatic liquid crystal molecules having a luminescent moiety and the composition being such that excitation of the luminescent moiety causes the medium to emit light in the bandwidth of selective reflection of the liquid crystalline phase.
2. (Original) A composition as claimed in claim 1 wherein the chiral, helical liquid crystalline phase is a chiral nematic liquid crystalline phase.
3. (Original) A composition as claimed in claim 1 wherein the chiral, helical liquid crystalline phase is a chiral, smectic C liquid crystalline phase.
4. (Currently amended) A composition as claimed in claim 1 wherein the liquid crystalline phase is in the form of a glass.
5. (Currently amended) A composition ~~capable of~~ for emitting circularly polarised light comprising a medium including a chiral, helical liquid crystalline phase in the form of a glass, said liquid crystalline phase being comprised of calamatic liquid crystal molecules having a luminescent moiety and the composition being such that excitation of the luminescent moiety causes the medium to emit light in the bandwidth of selective reflection of the liquid crystalline phase.
6. (Previously presented) A composition as claimed in claim 4 wherein the glass transition temperature (T_g) of the calamatic liquid crystal molecules is greater than 50°C.

7. (Previously presented) A composition as claimed in claim 1 wherein the calamatic liquid crystal molecules are present in the form of a polymerised network.

8. (Currently amended) A composition ~~capable of~~ for emitting circularly polarised light comprising a medium including a chiral, helical liquid crystalline phase in the form of a polymerised network, said liquid crystalline phase being comprised of calamatic liquid crystal molecules having a luminescent moiety and the composition being such that excitation of the luminescent moiety causes the medium to emit light in the bandwidth of selective reflection of the liquid crystalline phase.

9. (Previously presented) A composition as claimed in claim 1 wherein the luminescent moiety of the calamatic liquid crystal molecules is an electroluminescent moiety.

10. (Previously presented) A composition as claimed in claim 1 wherein the emission spectrum of the moiety is tuned to the bandwidth of selective reflection of the liquid crystalline phase.

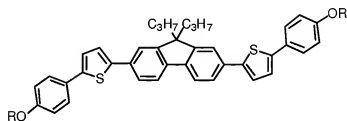
11. (Currently amended) A composition as claimed in claim 1 wherein the composition incorporates a dye ~~capable of~~ for absorbing the emission of the luminescent moiety and re-emitting light having a wave length in the bandwidth of selective reflection.

12. (Previously presented) A composition as claimed in claim 1 wherein the composition incorporates a dye which can be excited by non-radiative transfer from the liquid crystal molecules to the dye.

13. (Currently amended) A composition as claimed in claim 4—8 wherein the luminescent moiety of the calamatic liquid crystalline molecules is an electroluminescent moiety.
14. (Previously presented) A composition as claimed in claim 1 wherein the luminescent moiety of the calamatic liquid crystal molecules is a photoluminescent moiety.
15. (Previously presented) A composition as claimed in claim 1 wherein the liquid crystal molecules are whole transporting or electron transporting.
16. (Previously presented) A composition as claimed in claim 1 wherein the calamatic liquid crystal molecules include at least one chiral centre.
17. (Original) A composition as claimed in claim 16 wherein the liquid crystalline phase comprises chiral and achiral liquid crystal molecules.
18. (Previously presented) A composition as claimed in claim 1 wherein the calamatic liquid crystal molecules are achiral and the liquid crystalline phase includes a chiral dopant.
19. (Previously presented) A composition as claimed in claim 1 wherein the calamatic liquid crystal molecules incorporate a luminescent core comprised of 4 to 6 conjugated aromatic rings, said core being attached to two aliphatic spacer groups.
20. (Original) A composition as claimed in claim 19 wherein the aliphatic spacer groups each contain a chain of 4 to 16 carbon atoms.

21. (Previously presented) A composition as claimed in claim 19 wherein the core includes a fluorene moiety.

22. (Previously presented) A composition as claimed in claim 19 wherein the calamatic liquid crystal molecules are of the formula:



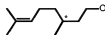
wherein each R is the same or different and represents the spacer group.

23. (Original) A composition as claimed in claim 22 wherein one or both of the R groups incorporate a chiral centre.

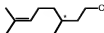
24. (Original) A composition as claimed in claim 23 wherein each R group is of the formula:



25. (Original) A composition as claimed in claim 23 wherein each R group is of the formula:



26. (Original) A composition as claimed in claim 23 wherein each R group is of the formula:



27. (Currently amended) A light emitting device comprised of a cell having a pair of opposed sides and containing a composition as claimed in any claim 1, at least one of said sides being transparent to the polarised light emitted by said composition on excitation of the luminescent moiety.

28. (Original) A device as claimed in claim 27 wherein the spacing between said opposed sides is to 1 to 10µm.

29. (Currently amended) A device as claimed in claim 27 which is ~~capable of being~~ excited by polarised and/or unpolarised light.

30. (Currently amended) A device as claimed in claim 27 ~~capable of emitting which~~ emits circular polarised laser emission.

31. (Previously presented) A device as claimed in claim 27 which is an OLED.

32. (Currently amended) The ~~combination of a~~ light emitting device as claimed in claim 27, further combined with and a Liquid Crystal Display device, said light emitting device providing a source of polarised light for the Liquid Crystal Display device.

33. (Currently amended) A method of producing a light emitting device as claimed in claim 29 comprising:

_____ providing a cell having a pair of opposed walls at least one of which is provided on its interior surface with an alignment layer, ~~and~~ filling the cell with a formulation which is a precursor to the composition of claim 1, which incorporates calamatic liquid crystal molecules having a luminescent moiety ~~and which is capable of being assembled~~

by said alignment layer(s) to a chiral, helical liquid crystalline phase, assembling said formulation into a chiral, helical liquid crystalline phase said liquid crystalline phase, and immobilising said phase so as to provide the latter with a fixed, temperature dependent independent helical pitch.

34. (Currently Amended) A method as claimed in claim 33 wherein the or each alignment layer is a photoalignment layer.